

Patent  
Attorney's Docket No. 000600-034

**REMARKS**

New claim 23 has been added.

As previously noted, Juda is of marginal relevance since it discloses a porous oxygen cathode immersed in an electrolyte solution in the cathode compartment which considerably reduces diffusion of oxygen to the surface of the gas layer of the gas diffusion electrode. The diffusion of oxygen to a gas diffusion electrode is much more efficient in the absence of electrolyte solution hindering the transport of oxygen. Even though alkali metal hydroxide is formed in the cathode compartment according to the instantly claimed invention (cf. claim 1), the surface of the gas diffusion electrode, i.e. the gas diffusion layer (cf. the constitution of the gas diffusion electrode which is further addressed in the specification at p.3, l. 28-30) in contact with oxygen is not substantially hindered by alkali metal hydroxide electrolyte (formed on the reaction layer of the gas diffusion electrode) since the alkali metal hydroxide electrolyte is formed on the side facing the cation selective separator and the cathode as such is not immersed in the electrolyte.

With respect to the rejection of claim 23, the Examiner clearly understands that the cathode compartment is divided "into a gas chamber (29) on one side of the gas diffusion electrode and an alkali metal hydroxide chamber (17) between the gas diffusion electrode and the cation selective separator". Numeral 17, however, signifies the ion exchange membrane. Furthermore, cathode 25 (cf. FIG.2, col.7, l.37- 53) is immersed in electrolytic solution (19) which enters the compartment through inlet 21 and leaves through outlet 23. The cathode 25 is composed of a porous conductor capable of activating an oxidant fuel, e.g. oxygen gas, absorbs and releases into the catholyte (electrolytic solution) 19 in an electromechanically active form

Patent  
Attorney's Docket No. 000600-034

the oxidant which enters the cathode by means of inlet 27 extending into well 29 of the electrode confined to the central portion of the electrode. The oxygen-containing gas is conducted into the catholyte 19 via the porous cathode 25 (col.7, 1.63-65). The transport of oxygen via the electrolyte to the surface of the electrode is not clearly disclosed.

In view of the above, it cannot be understood that the interior (the formed well inside the electrode 25) of the electrode in fact is a gas chamber and that the surrounding of the electrode (outside the outer surface thereof) is an alkali metal hydroxide chamber since the oxygen is transferred to said alkali metal hydroxide chamber via the well inside the electrode. There are thus no chambers separating the oxygen gas from the alkali metal hydroxide.

The object of Wanngard is to provide pH adjusting chemicals by integrated production of acid and alkali metal hydroxide. A further object is to produce chlorate in an energy-efficient manner, involving significantly reduced health and environmental hazards, and making superfluous a large portion of the chemicals added in conventional processes for acidification and alkalization (col.1, 1.5-9, col.2, 1.46-52).

Consequently, a skilled person finds no incentive to modify the teaching of Wanngard in such a way to arrive at the claimed process since Wanngard is not aiming at providing a divided cell with a gas diffusion electrode. Rather, Wanngard focuses on providing an integrated production of acid and alkali metal hydroxide in a conventional undivided cell. A skilled person could not foresee that a divided cell would advantageously contribute to produce integrally acid and alkali metal hydroxide. On the contrary, since several parameters differ between divided and undivided chlorate cells including e.g. mixing conditions of electrolyte, control of pH, need of supplying acid/hydroxide, the skilled person would not search for the solution in technology

Patent

Attorney's Docket No. 000600-034

describing divided chlorate cells, particularly not Juda being silent on integrated production of acid and alkali metal hydroxide.

Thus, a skilled person would still not arrive at the presently claimed invention.

Applicants therefore respectfully request that a timely Notice of Allowance be issued in this case.

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Respectfully submitted,

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